

another common plane that is disposed at an angle relative to the one plane.

12. (New) The apparatus of claim 1 in which at least one of the conductive members defines a generally hollow inner bore.

63 13. (New) The apparatus of claim 1 in which at least one of the conductive members defines a generally annular cross-sectional shape.

REMARKS

In the Office Action of November 19, 2002, all pending claims were rejected under 35 U.S.C. 102(e) or 35 U.S.C. 103 in view of U.S. Patent No. 6,071,281 to Burnside alone or in combination with U.S. Patent No. 5,680,860 to Imran. Reconsideration and allowance are respectfully requested.

The present amendments make clear that the jaws of the claimed ablation clamp are substantially parallel when in the closed or clamped position so that each jaw of the claimed ablation clamp includes an elongated curved conductive member (claim 4) or an electrical conductive member that extends along at least one of two jaw portions that are angled relative to one another (claim 1), unlike the devices taught or suggested in the cited Imran or Burnside patents.

More specifically, claim 1, as amended, specifically sets forth that the jaws are substantially parallel when clamped, and that each jaw includes a first portion extending in one direction

relative to the handle, and a second portion extending in a different direction, with the elongated conductive element of each jaw extending continuously along at least one of the jaw portions. Amended claim 4 now specifically recites that the elongated electrode of each jaw extends continuously along the jaw and is curved to generally the same curvature as the clamping surface. This is not shown or suggested in the cited references.

Figure 80 of the Burnside '281 patent, which was cited as showing a curved clamp, employs a series of short straight "intermittent" or spaced-apart flat electrodes 294, as best seen in Figures 78 and 79, that are for sealing and cauterizing walls of tissue together. The Burnside patent does not teach or suggest the use of continuous elongated electrically conductive ablation members that extend along a jaw including one or more portions of the jaw that are curved or angled relative to each other. Although elongated continuous curved electrodes have been employed in bipolar scissors used for cutting and cauterizing, there is no known disclosure or suggestion in the cited prior art for employing continuous elongated conductive members as recited in claims 1 and 4 with the jaws of a device for clamping and ablating tissue to form transmural lesions in such as cardiac tissue.

As pointed out in the application, the present device is particularly useful in forming ablation lines simultaneously through opposed walls of the atrium -- without sealing the walls together. This is fundamentally different from the Burnside

device, which is designed to maximize thermal effect and actually weld opposed walls of the atrial appendage together. The cited Burnside reference is actually quite different from the claimed ablation device and does not teach or suggest the claimed features.

To the contrary, both references teach away from the claimed subject matter. Both cited references would appear to lead one of ordinary skill in the field to adopt a series of short, straight spaced-apart electrode elements on the jaws. This is readily contrasted with the elongated continuous conductive ablation member that extends along the jaw as recited in claims 1 and 4 of the pending application.

In addition, Applicant has added dependent claims directed to additional features of the present invention and these claims also are not shown or suggested by the prior art. For example, application claim 9 specifically recites that the electrically conductive element is carried within the jaw and is conductive through a slot in the jaw to ablate tissue clamped by the jaw. This feature may be seen, for example, in Figure 32 in which each jaw has an insulative material 88 on the clamping surface with a generally centrally located slot that extends along the jaw. Electrodes 94, 96 are carried within the jaw below the insulating surface, with a portion of the electrode located in alignment with the slot for conducting current through the slot and any tissue clamped between the jaws.

Claims 12 and 13 also recite that the conductive member defines a hollow inner bore or defines a generally annular cross-sectional shape (see Figures 3 and 6). The claimed combination with these features is not disclosed or suggested by the cited references.

For all of the above reasons, it is respectfully submitted that the claimed subject matter is not taught or suggested by the cited prior art, either alone or in combination, and it is respectfully requested that this Amendment be entered and the application be reconsidered and allowed.

Respectfully submitted,

Date: February 19, 2003

By: 

Gary W. McFarron, Esq.
Registration No. 27,357
Cook, Alex, McFarron, Manzo,
Cummings & Mehler, Ltd.
200 West Adams St., Suite 2850
Chicago, IL 60606
Telephone: (312) 236-8500

Attorneys for Applicant

MARKED UP VERSION OF CLAIMS TO SHOW CHANGES

1. (Amended) A device for clamping and ablating cardiac tissue comprising:

a first handle member;

a second handle member;

first and second mating ~~curved~~ jaw members associated with the first and second handle members, respectively, the jaw members being movable by the handle members between a first open position and a second clamped position in which they are substantially parallel;

a first elongated ~~electrode extending~~ electrical conductive member carried by ~~along~~ the first jaw member;

a second elongated ~~electrode extending~~ electrical conductive member carried by ~~along~~ the second jaw member;

each jaw including a first portion extending in one direction relative to the handle and a second portion extending in a different direction, the elongated conductive member of each jaw extending continuously along at least one of the jaw portions;

the first and second electrodes being adapted to be connected to an RF energy source ~~so that, when activated, the first and second electrodes are of opposite polarity.~~

4. (Amended) A tissue grasping apparatus comprising:

first and second grasping jaws, the grasping jaws being relatively moveable between open and closed positions, the jaws

being substantially parallel in the closed position; each jaw including an elongated electrode and a curved clamping surface in face-to-face relation with the electrode and curved clamping surface of the other jaw, the elongated electrode of each jaw extending continuously along the jaw and being curved to generally the same curvature as the clamping surface; the curved clamping surfaces of the jaws comprising an insulating material and the face-to-face electrodes being connectible to a power source for providing an electrical current through tissue clamped between the electrodes.

7. (New) The apparatus of claim 1 in which a curved jaw portion extends between the first and second portions of each jaw and the electrically conductive element of each respective jaw extends along the curved portion of such jaw.

8. (New) The apparatus of claim 1 in which the jaws are generally pivotally movable relative to each other between the open and clamped position, and the first and second portions of the first jaw lie in a first plane and the first and second portions of the second jaw lie in a second plane, the first and second planes being disposed at an angle in the open position and generally parallel in the clamped position.

9. (New) The apparatus of Claim 1 in which each jaw includes a surface for engaging tissue clamped between the jaws, the facing surfaces of the respective jaws each comprising insulative material, a slot extending through the insulative material along

the jaw and the respective conductive member of each jaw being carried in the jaw and conductive of electrical energy through the slot to tissue clamped between the jaws.

10. (New) The apparatus of claim 9 in which the conductive member of each jaw extends through the slot of such jaw.

11. (New) The apparatus of claim 1 in which, when in the clamped position, first portions of each jaw generally lie in one common plane and the second portions of each jaw generally lie in another common plane that is disposed at an angle relative to the one plane.

12. (New) The apparatus of claim 1 in which at least one of the conductive members defines a generally hollow inner bore.

13. (New) The apparatus of claim 1 in which at least one of the conductive members defines a generally annular cross-sectional shape.